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Report on Diseases of Farm Livestock

SECTION III: PARASITIC DISEASES OF BOVINES

(*Continued from page* 79.)

DISEASES CAUSED BY ARTHROPODS

(*Continued*)

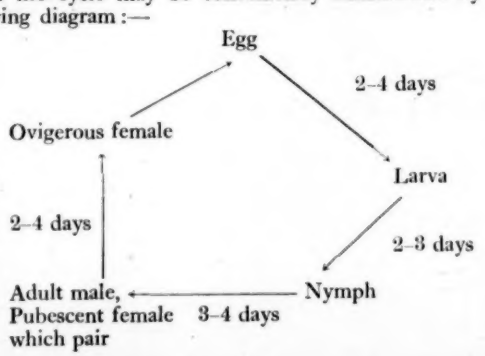
Scabies

Cattle are susceptible to infection with four different species of mange mites, namely *Sarcoptes scabiei*, *Psoroptes communis* var. *bovis*, *Chorioptes bovis* and *Demodex bovis*. Infections with *Psoroptes* and *Chorioptes* (formerly known as *Symbiotes*), which may exist together in the same animal, are more prevalent than with the other two forms; Chorioptic mange seems to be the most common of all.

LIFE HISTORY

Excluding *Demodex*, the other three species of mites have somewhat similar life histories which only differ from one another in detail; all show variations, according to the season, temperature and other conditions, in the times required by the different stages for their development. It can, however, be said that in general the life cycle takes about two to three weeks and is roughly as follows: after deposition the egg hatches in two to four days and there emerges a six-legged larva, which moults after two to three days and gives rise to the nymph. The nymph possesses eight legs and has a superficial resemblance to the adult but is smaller than it and is sexually undeveloped. The nymphal stage lasts three to four days and, after a moult, gives rise to the adult male or pubescent female. After pairing, the fertilised female moults to become the ovigerous female which proceeds to lay her eggs. The number of eggs laid daily and the total number of eggs deposited during the lifetime of the ovigerous female varies according to the species; generally speaking, the adult mites live for about four to five weeks on the host. The length of time each stage may remain off the host and still be capable of retaining its vitality has not been fully established. The mite eggs appear to have little resistance to external conditions but may remain capable of hatching up to about a week after leaving the body of the animal. Larvae, nymphs and adults, on the other hand, may remain alive away from the host for two or three weeks in nature, although, under laboratory conditions, their survival time may be longer, particularly that of the adults.

The life cycle may be conveniently summarised by the following diagram:—



SARCOPTIC MANGE

This is the most serious form of parasitic mange because of the burrowing habit of the ovigerous female mite beneath the host's skin to form tunnels in which the eggs are laid, and the consequent difficulty of effecting a cure by local applications of medicaments to the skin.

The host specificity of *Sarcoptes scabiei* is not absolute since it has been found possible to transmit the mites from one species of host to another. Cattle can be infected from the horse, sheep, goat, cat and pig, while human beings may become infected, chiefly on the arms, chest and neck, with the sarcopt of cattle, producing a complaint known as 'dairyman's itch.'

The mite prefers those parts of the body not covered by much hair and produces a highly contagious form of mange associated with severe itching. It usually first appears on the head, neck and brisket and may also occur on the inner surface of the thighs and in the folds around the base of the tail. The earliest lesions are small nodules or little papules which soon develop into vesicles capped with small yellow granules of dried serum and give rise to small bald patches. These foci increase in number and in extent as the infection becomes more general and in later stages the hair becomes thin over the whole of the affected area, the skin becomes thickened, wrinkled and scaly and is thrown into folds and generally has a dry, scurfy appearance. Constant rubbing and scratching may cause large scabs to form and the affected area increases in extent and may, in unchecked cases, ultimately occupy a large proportion of the surface of the body. In some cases, sarcoptic mange is a severe disease, resulting in death; at other times it runs a short course with spontaneous recovery.

The diffuse demarcation between affected and healthy areas of skin is a rather characteristic feature of this kind of mange and often helps to differentiate it from psoroptic or chorioptic mange, in which the affected areas are much more clearly defined and there is a sudden change from the bald, crusty affected area to the surrounding healthy skin.

PSOROPTIC MANGE

This is a somewhat less serious disease owing to the fact that the mites live on the surface of the skin and can, therefore, be more easily reached by dressings. Nevertheless, it is very contagious and spreads rapidly from one animal to another, especially when they are housed. Unlike *Sarcoptes*, the *Psoroptes* mites are specific to their hosts and cattle do not contract the disease from other kinds of animals.

Infestation may start on any part of the body thickly clothed with hair, and the withers, neck and root of the tail are usually first attacked, the mites spreading from these places over the sides until almost the entire body is affected. In the very early stages of the condition, symptoms are not very evident, the initial infestation with a few mites causing little scabbing. Even lightly infested animals exhibit a tendency to rub and scratch at the affected parts, however, and the disarranged condition of the hair often affords a clue to the trouble. The initial lesions are small papules exuding serum with red, moist areas around them and are accompanied by intense itching. Within a few weeks the mites may increase enormously in number and lead to the loss of hair over large areas which become covered with serum oozing from the places

where the mites have fed. The serum dries to form yellowish crusts or scabs which become increasingly thick. The skin itself also becomes thickened, stiff and corrugated. The intense itching causes persistent rubbing in an attempt to obtain relief and may result in inflammation and ulceration so that considerable loss of condition occurs in severe cases. If the progress of the disease is not checked, the animal may become very emaciated and finally die. During the summer this kind of mange often almost completely disappears to return again in a severe form when the animals are housed during the winter months. Seasonal recurrence is a common feature of this disease and may be observed to take place more than once on the same farm.

Chorioptic (Symbiotic) Mange

The mites causing this disease live on the skin surface and are host-specific. Chorioptic mange is not very contagious and may affect only one or two animals in a herd; it is usually of a mild type, remaining localised and spreading slowly. The mites and the lesions they cause are usually restricted to the feet and legs, the base of the tail and anal or sacral regions. The lesions usually take the form of thick crusts in which numerous parasites are to be found. In rare cases the disease may spread to other parts of the body such as the neck, back or belly, or may even extend over the whole body. It is most frequently seen during the winter but does not cause serious loss of condition.

Demodectic or Follicular Mange

This type of mange is the rarest form and is not very often encountered in Great Britain. In cattle, the infested animal first shows a localised nodular eruption, usually on the neck or shoulders. Later, the nodules appear in greater numbers, gradually spreading to the ears, face, trunk and upper parts of the limbs. The nodules or pustules vary in size from a millet seed up to that of a walnut and contain numerous mites in various stages of development in the cheesy or fluid contents. In the later stages of the disease and in neglected cases the nodules may coalesce and burst, discharging the purulent contents, and the irritation causes the skin to become harsh, thickened and denuded of hair. The pustules may be situated in the thickness of the skin instead of on the surface. As a general rule the condition is a mild one in animals which are otherwise in a normally healthy condition, and there is little itching, while spontaneous recovery frequently occurs. The disease progresses slowly and does not seem to affeot the general health of the animal, and the danger of spread from one animal to another is considerably less than in the other types of mange. Debilitated animals on the other hand may become much more severely affected and even die of the disease which, in these advanced cases, is considered by some authorities to be incurable. The skin of such animals is of little value for tanning purposes.

Diagnosis

As lesions similar to those resulting from mite infestations occur in other skin diseases, a certain diagnosis of scabies or mange can only be made by microscopical examination and the demonstration of parasitic mites. To do this, the best procedure is to examine skin scrapings which should be collected from sites chosen with considerable care as likely to be the most advantageous for the recovery of the actively working parasites. Very scabby lesions, areas completely denuded of hair, and areas of severe dermatitis should be avoided and search made for the newer and more actively developing lesions. As *Sarcoptes* is a burrowing mite, it is necessary to take a deep scraping, deep enough to draw blood. A shallower scraping is, however, adequate where a search is to be made for other species of mites. In psoroptic mange the largest numbers of parasites are to be found at the edges of the latest-formed scabs and in sarcoptic mange the scraping is best taken from the edge of an area denuded of hair and where small pimples occur in otherwise healthy skin.

The scraping may be examined by one or other of the following methods:—

(*a*) *Direct Examination.*—The scraping from the skin is placed on a microscope slide and thoroughly mixed with a drop or two of 10 per cent. potassium hydroxide solution and then covered with a coverglass. The slide is next gently heated to allow the caustic potash to break down the scabby material and drive out all imprisoned air bubbles. Examination is then carried out with the low-power (2/3) objective, only using the higher power (1/6) to bring out detail.

(*b*) *Sedimentation or Centrifugation Method.*—This method may be used where direct examination has failed to demonstrate the presence of mites. It is frequently adopted as the method of choice without preliminary examination by the direct method. The procedure is to place the scraping in a test-tube, and to add about 5 c.c. of 10 per cent. caustic potash; the mixture is then boiled, preferably by standing the test-tube in a beaker of water which is gradually heated to boiling point. Boiling should continue for several minutes until the scraping is completely broken down. After the tube and its contents have cooled some of the mixture may be transferred, immediately after thorough agitation, to a centrifuge tube and centrifuged at about 1,500 revolutions per minute for two minutes. If no centrifuge is available, the cooled test-tube and its contents should be allowed to stand in an upright position for about 15 minutes or until such time as the mites and debris have gravitated to the bottom. Whichever method is used, the supernatant fluid is poured off and a direct examination of the sediment carried out.

(*c*) *Flotation Method.*—The procedure is exactly similar to that outlined above for the sedimentation or centrifugation method up to the point where the supernatant fluid is poured off. After the fluid has been discarded, saturated salt solution or sugar solution consisting of one pound dissolved in three-quarters of a pint of water (to which a crystal or two of thymol is added to prevent the growth of moulds) is poured into the tube containing the sediment which is then thoroughly mixed with the flotation solution. Where no centrifuge is available, the test-tube, which should be filled with the flotation solution until its surface projects a little above the lip of the tube, is covered with a 3 by 1 inch microscope slide and allowed to stand in an upright position for about half an hour. At the end of this period, during which the mites, if present, will have floated up to the surface of the fluid, the slide is carefully removed, inverted and examined under the two-thirds of an inch objective after covering the fluid area with a coverslip. Where a centrifuge is at hand the procedure may be speeded up by spinning the tube containing the mixture of sediment and flotation solution at 1,500 revolutions per minute for about two minutes. The surface layer of fluid, containing the mites, may be transferred to a slide by means of a platinum loop, or the flattened surface at the end of a glass rod, then covered with a coverglass and examined microscopically.

Demodex is made very transparent by boiling in caustic potash and it is better to transfer the scraping to a slide and add a drop or two of liquid paraffin or olive oil. The material may then be broken up by light movement between slide and coverslip before microscopical examination is carried out.

Failure to find mange mites in a skin scraping is not sufficient ground for a negative diagnosis. If, however, a second and a third examination, carried out a few days later on fresh

material, fails to reveal the presence of mites, then it is reasonably safe to make a negative diagnosis.

As a diagnosis depends on the demonstration of the mites and their correct identification it is necessary to be familiar with the appearance of the parasites. Free living mites are very often found on the skin of animals and great care must be taken to distinguish between these and the parasitic mites with which there may be a close superficial resemblance. Some of the commonest of the free living acari found in skin scrapings show a close general resemblance to mange mites in that their bodies are rounded, but in a general way forage mites may be distinguished by their rather elongated body, sometimes presenting a constriction between the cephalothorax and abdomen, and by the legs being structurally similar, although this is not invariably so. Sarcoptic or mange mites have short, oval to round bodies, lacking any constriction between cephalothorax and body, and the legs are commonly dissimilar in structure and in the appendages to the terminal segments.

In identifying the parasitic mites, too much reliance should not be placed on the appearance of the tarsal suckers as they may have been removed in the boiling process with caustic potash; the mites themselves may also be broken up during this process and diagnosis may require to be made from a legless body or even from a pair of legs and a head. The table given below sets out the chief characteristics of the three species of mange mites; details of their structure can best be appreciated by a study of illustrations of these mites in a good text-book of entomology.

Genus	Body	Rostrum	Legs	Pedicels	Suckers	Suckers of	
						Male	Female
Sarcoptes	Almost circular in outline	Short, stout and semi-circular	Two front pairs arise from edge of body and are easily seen. Two hind pairs arise from ventral surface and do not protrude beyond body margin	Fairly long, thin and unsegmented	Small and bell-shaped	On 1st, 2nd and 4th pairs of legs	On 1st, and 2nd pairs of legs
Psoroptes	Oval in outline and readily seen by naked eye	Long and conical	All four pairs arise near body margin from which they protrude and are easily seen	Long and three segmented	Long, narrow and tulip-shaped	On 1st, 2nd and 3rd pairs of legs	On 1st, 2nd and 4th pairs of legs
Chorioptes	Oval in outline and somewhat smaller than in *Psoroptes*	Triangular	All four pairs arise near body margin from which they protrude and are easily seen	Short and unsegmented	Large and bell-shaped	On all four pairs of legs	On 1st, 2nd and 4th pairs of legs

Demodex, which is not described in the above table, is relatively easily recognised. It is about 0·25 mm. long and cigar shaped; the adult has four pairs of stumpy, mole-like legs on the ventral aspect of the front part of the body while the larval form of the mite has only three pairs of legs in the same situation.

Treatment and Control

The same general principles of control apply to all groups of mange mites and the treatment to be applied is the same for all forms of mange and in every case extreme thoroughness is essential for success. Dipping so that the animal is completely immersed in a suitable medicated solution is the best practical method of eradicating most mange diseases. One treatment is seldom sufficient and in some types of mange a succession of dips at proper intervals is necessary. Dipping cattle is widely carried out in the United States of America and elsewhere, but in Great Britain this procedure is not a standard farming practice. Spraying, however, can be done and any of the solutions used as dips can be applied as sprays; these include calciu msulphide or lime-sulphur dip, sulphur and oil, carbolic acid and soft soap, tobacco and sulphur, and nicotine sulphate dips. Small areas may be treated individually but this form of treatment is of no use where the affected areas are at all extensive. The hair should be clipped from the affected part and the skin cleaned with soap and warm water after which a suitable local dressing such as 5 per cent. creolin, or 5 per cent. lysol may be applied. Where cattle are kept in large herds and a number are affected at one time or where the lesions are extensive, both the infected and in-contact animals should be treated. It may be necessary to clip the hair and to loosen all scabs and crusts with a brush prior to treatment. Two dressings are usually sufficient to control sporoptic or chorioptic mange, although a third dressing might, with advantage, be given where there may be doubt as to the efficacy of the first two applications. Four or more dressings may be needed for the more resistant sarcoptic mange. The intervals between dressings should be ten days, reducing the period to six or seven days in the case of sarcoptic mange. These intervals give time for most of the eggs to hatch but are not long enough for females to become ovigerous and lay more eggs. Besides treatment of affected animals, disinfection must be carefully carried out of all buildings that have housed mangy animals and of all equipment that has been used on affected beasts. All litter and bedding should be removed and burned at the time of the first treatment of the animals. A 5 per cent. solution of carbolic acid is an effective disinfectant for buildings. Where it is impracticable to disinfect cowsheds and other premises that have recently housed mangy cattle, an interval of at least three, or preferably four, weeks should elapse before allowing them to be occupied by healthy animals.

Watch should be kept for chronic cases in which the mites are few in number and the affected parts small in extent. Such chronic cases in a herd of cattle, while they may be the means of spreading the disease amongst other animals, may themselves escape attention.

The formulae for the dressings mentioned above are as follows:—

1. *Calcium Sulphide or Lime-sulphur Dip.*—Mix 25 pounds flowers of sulphur with 12½ pounds quick-lime into a smooth paste with water. Transfer this mixture to a boiler, bringing the volume up to 20 gallons by adding water, and boil and stir for half an hour or until the liquid is dark red-brown in colour. After cooling decant the liquid or strain the mixture through a cloth or sack and make up the fluid to 100 gallons with water. The solution is then ready for use.

2. *Sulphur and Oil.*—Flowers of sulphur, two and a half pounds; Sperm oil or linseed oil, one gallon.

3. *Carbolic Acid and Soft Soap Dip.*—Dissolve five pounds of soft soap with gentle warming, in three quarts of liquid

carbolic acid (containing not less than 97 per cent. of tar acid). Mix the resulting liquid with enough water to make 100 gallons.

4. *Tobacco and Sulphur Dip.*—Steep 35 pounds of finely ground (offal) tobacco in 21 gallons of water for four days. Strain off the liquid and remove the last portions of the extract by pressing the residual tobacco. Mix the whole extract and to it add ten pounds of flowers of sulphur. Stir the mixture well to secure an even admixture and make up the total bulk to 100 gallons with water.

5. *Nicotine Sulphate Dip.*—The dilution of the dip should be such as to give a final concentration of 0·002 per cent. nicotine sulphate.

Dimethyl-diphenylene-disulphide, or dimethylthianthrene, which is the active principle of 'Mitigal' and 'Sudermo,' dimethyl-diphenylene-disulphide combined with isoheptylacetate, sold as 'Odylen,' derris and its extracts, benzyl benzoate, and tetramethylthiuram monosulphide, sold as 'Tetmosol,' have all been used in animals affected with mange and it appears that these preparations are effective in curing a high proportion of cases when properly used, but opinions differ as to which is best. Recent investigations show that tetramethylthiuram monosulphide is an efficient acaricide which has the advantage over some other preparations of being practically odourless and it does not irritate the skin. Limited trials with this chemical used as a 1/20 dilution of a 25 per cent. emulsion on cattle affected with typical 'neck mange' gave successful results.

In addition to the above, numerous other remedies have been used in the therapy of mange or scabies although the majority have fallen into disuse because they were inefficient in killing the mites or because they produced an irritant effect on the skin.

A low nutritional condition predisposes to the spread of scabies and a full diet is a good adjunct to acaricidal treatment.

Tick Infestation of Bovines

Four of the eleven species of Ixodid ticks, which are indigenous to Great Britain, may infect cattle. They are:—

1. *Ixodes ricinus.*
2. *Ixodes hexagonus.*
3. *Haemaphysalis cinnabarina* var. *punctata.*
4. *Dermacentor reticulatus.*

Ixodes ricinus, known under a variety of popular names such as 'sheep tick,' 'castor-bean tick,' 'grass tick' or 'heather tick,' is the species which occurs most commonly and is of greatest economic importance in Great Britain. It is widely distributed and is to be found in greatest numbers on the hill pastures of Scotland and northern England, being especially common on the Grampian Hills, the Border Uplands of Scotland, the Pennines and the Yorkshire moors. It is also fairly common in the hills of North Wales and in south-west England. It is found over most of Ireland but rarely occurs in the lowland parts of England. *Ixodes hexagonus*, which is parasitic mainly on small mammals, is known to occur in Ross-shire and the Ettrick district of Scotland, in Northamptonshire, Cambridgeshire, Hertfordshire, Kent, Sussex, Hampshire, Berkshire, Oxfordshire, Warwickshire and Shropshire in England, and in Cardiganshire in Wales. Locality records of *I. hexagonus* are not very numerous and it is possible that its geographical distribution is wider than the above. *Haemaphysalis cinnabarina* var. *punctata* (commonly referred to simply as *Haemophysalis punctata*) is practically confined to the county of Kent although it has also been recovered in Glamorganshire, Devon, Dorset and Essex. *Dermacentor reticulatus* has been reported from Devon, Somerset and the Aberystwyth area of Wales.

Life History

Since the life histories of these four ticks are essentially similar and all can be controlled by the same methods, the details of the life cycle of *Ixodes ricinus*, the most important species, will only be described.

Ixodes ricinus is a three-host tick which means that during its development the larval, nymphal and adult stages are each spent on different individual hosts and the intervening moults between the stages occur on the ground after engorgement. In the final stage, after mating, the males of this species usually drop to the ground and die soon afterwards, but the females remain attached to the host for seven to eleven days and when greatly distended with blood, they drop to the ground and seek shelter beneath stones or tufts of grass. After two to three weeks the female begins to lay 500 to 2,000 or more eggs amongst the roots of grass, rushes or heather. The process takes several days during which the eggs accumulate in a steadily increasing mass in front of the tick which gradually shrinks in size and, after a week or two, dies. The period required for the hatching of eggs varies with the temperature: they hatch in about four weeks in summer, after which the six-legged larvae or 'seed ticks' undergo a process of hardening for about ten days before attempting to seek out a host. The larvae, each of which is about the size of a pin's head, then climb the grass blades, bracken or heather during warm weather and await the chance passing of suitable hosts to which they immediately transfer themselves. Larvae unsuccessful in finding a host are capable of resisting starvation for a period of 15 months or even longer. Having found a suitable host, the larva selects its site and buries its mouth-parts in the skin where it feeds for three to five days. When replete with blood, it drops to the ground and crawls into some sheltered spot in the soil or amongst grass roots where the blood meal is digested. After a

Table showing the Life Cycle of *Ixodes ricinus* in Relation to the Succession of Seasons. Two Complete Cycles, extending over Three Years, are shown

First Year	Winter:	Eggs develop slowly	First complete life cycle
	Spring:	Larvae hatch from eggs. Larvae feed on host for 3–5 days	
	Summer:	Larvae moult to nymphs	
	Autumn:	Nymphs feed on host for 4–7 days	
Second Year	Winter:	Nymphs develop slowly	
	Spring:	Nymphs moult to adults. Females feed for 7–11 days and lay eggs	
	Summer:	Larvae hatch from eggs	Second complete life cycle
	Autumn:	Larvae feed on host for 3–5 days	
Third Year	Winter:	Larvae develop slowly	
	Spring:	Larvae moult to nymphs. Nymphs feed on hosts for 4–7 days	
	Summer:	Nymphs moult to adults	
	Autumn:	Females feed for 7–11 days and lay eggs	
Beginning of fourth year	Winter:	Eggs develop slowly	Beginning of third complete life cycle

variable period of time which may extend from 6 to 50 weeks or even more, depending upon the temperature, the larva moults to produce the nymphal stage which has eight legs but is sexually immature. The nymph is about the size of a match-head and, after some days, during which it hardens, it climbs upon vegetation where it awaits the opportunity of becoming attached to a host. Like the larvae, nymphs which do not quickly reach a host can resist starvation for periods up to 13 months or even longer. On the second host the nymph feeds for four to seven days, and, when engorged, drops to the ground and after some time—which extends in spring and summer from 10 to 19 weeks, it moults to produce the adult stage. After hardening for about a week, the adults seek out a third host upon which they proceed to feed. Adults also have remarkable powers of fasting and have been observed to withstand starvation for 21 months if unsuccessful in finding a suitable host.

The time taken to complete the life cycle varies according to the season and the different stages succeed each other more rapidly in summer than in winter. Although it has been calculated that about 170 days represents the shortest possible time required for the completion of the life cycle, it appears that under natural conditions in Britain, the minimum life cycle of the tick is one and a half years, but as each unfed stage may survive for at least a year while awaiting a host, the life cycle may extend to four and a half years.

Effect of Environment

As the tick spends only 14 to 23 days on the different host animals out of a total life of from about 500 to 1,500 days, it is obvious that for the greater part of the life cycle it is subjected to the same influences and controlled by the same factors which affect any free-living organism. In this respect, both temperature and moisture are important controlling factors. Below 45° F., the tick is inactive and under such conditions infestation of the host is rare and only occurs when animals lie on, and so warm the inactive ticks. At higher temperatures, the parasites become active, climbing to the tips of grass blades or other vegetation whence they are easily transferred to passing hosts. When the temperature rises above 60° F. the ticks tend to abandon the herbage and seek the shelter of the vegetation mat. The ticks show a seasonal periodicity which is correlated with the air temperature and they are most active and occur on their hosts in greatest numbers during the periods of the year when the temperature ranges between 45° F. and 60° F. approximately. Thus from November onwards throughout the winter the ticks are inactive in sheltered places. They begin to infest animals from March and become numerous until the end of May when they then become scarce but are not entirely absent from cattle and sheep. In August they are again fairly numerous for a short period until November when they have disappeared from the animals. In the north-east of Scotland, however, there appears to be one peak of infestation with its maximum in July.

Moisture is also an important factor controlling the development of ticks which are very sensitive to changes in the humidity of their surroundings. Dryness weakens their resistance and materially reduces their length of life. In summer the unfed tick requires at least 80 per cent. saturation for survival and the engorged tick 85 per cent. saturation for development. Such conditions are found on heaths, moors and similar places where there is a close mat of vegetation and these areas are best for tick survival. Well grazed and well managed pastures do not fulfil these conditions so completely and the incidence of the parasites on such pastures is, therefore, comparatively low.

The four species of ticks named at the beginning of this section are all capable of parasitising several other animals in addition to cattle; not only are domesticated mammals attacked but also a number of small wild mammals, and this is a very important factor bearing on the control of ticks. Thus, in addition to cattle, *Ixodes ricinus* can live on sheep, goats, horses, deer, dogs, foxes, rabbits, hares, squirrels, hedgehogs, moles, rats, etc. Larval and nymphal stages also attack, to a less extent, many birds such as grouse, plover, crows, hawks and owls.

Economic Importance

Although the economic importance of ticks is due chiefly to the fact that they act as vectors of certain diseases affecting domesticated animals, a heavy tick infestation may, of itself, cause considerable loss. The presence of ticks produces irritation causing infested animals to rub and scratch—a condition known as 'tick worry.' Where the infestation is heavy, an appreciable quantity of blood may be lost by the host, both directly as a result of the blood-sucking habits of the parasites, and indirectly through bleeding from the wounds produced. As the biting tick injects an anti-coagulant into the wound, a considerable quantity of blood may escape after the engorged parasite has detached itself and before slow coagulation occurs. The anaemia resulting from these two methods of blood loss can be severe.

Ticks are vectors of two diseases of cattle. The more important one is babesiosis, or bovine piroplasmosis, or 'redwater fever' caused by *Babesia bovis* (which is discussed earlier in this report). In Britain, *Ixodes ricinus* is the vector of this disease which may be transmitted hereditarily through the egg to the larva, or from stage to stage of the tick. It has been suggested that *Haemaphysalis punctata* may also transmit this disease of cattle in Britain, but there is insufficient reliable evidence to show that it does so. Louping-ill may also affect cattle—although it most commonly affects sheep—and is transmitted by nymphs and females of *Ixodes ricinus* which have become infected in their previous stage. In this case the disease is not transmitted hereditarily.

Control

The methods used to control ticks fall into two main groups. Firstly, there are those which aim at reducing the tick population of pastures and, secondly, those which aim at destroying the parasites already on the host. The latter methods cannot keep animals tick free, if they are again to be placed on tick-infested land, but they should always be used when animals are being moved from tick-infested to tick-free areas.

Measures which reduce the humidity below the limits necessary for tick survival have been recommended. Thus the vegetation mat can be modified by proper pasture management such as the elimination of moss, unpalatable grasses and the maintenance of a closely grazed mat of good herbage. Harrowing and liming helps towards this same end, as does mixed grazing. Drainage is another useful measure, also grass burning which kills those unfed active ticks that happen to be on the grass tips, although engorged ticks in hiding in damp soil escape, as do also their eggs. On account of the greater mass of dead herbage in spring than at other seasons and the mass migration of the hungry tick to the tips of the herbage, grass burning has its maximum effect in spring when these conditions prevail.

Control has also been attempted by starvation of the ticks following the removal of all domesticated stock from the land. Alone, this process is not very effective, but it is of value when combined with other methods, *e.g.*, combined dipping and starvation (see below). To be effective, the starvation method would require the absence of stock from land for periods up to two years, since each stage of the tick can survive for at least one year. The impracticability of the

starvation method is further increased by the difficulty of excluding wild hosts from the land. Short period starvation actually tends to produce a heavier tick infestation when animals are returned to the land, since large numbers of hungry ticks will then be waiting on the herbage.

Destruction of the parasites on the host animals can be carried out by dipping or spraying. Dipping is probably the more effective and easier procedure, but facilities are rarely available for the dipping of cattle in this country. In the absence of such facilities, cattle can be sprayed by a pump of the stirrup pump type or some other apparatus serving the same purpose. Any of the dipping solutions normally used for sheep can be used for cattle. They fall into two classes: (1) arsenical dips, and (2) derris dips. Arsenical dips, when diluted for use, should have a strength equivalent to 0·2 per cent. As_2O_3; and derris dips should have a strength equivalent to one in 5,000 of derris resins. While both types of dips have a satisfactory action in killing the ticks neither has any marked protective power. In dipping or spraying animals, care must be taken to ensure that they are completely wetted and that the fluid remains in contact with their coats for a sufficient time to kill the ticks. The animals should be immersed in the dip bath for a full minute; if they are sprayed, the procedure must be carried out in such a way as to obtain a similar effect. Derris, in powder form, has also been used to control ticks; where only a few animals have to be treated the derris can be dusted into the animals' coats every ten days during the period of tick activity. Spraying, however, is more convenient when larger numbers of animals require attention.

The best method of controlling ticks is, probably, a combination of starvation and dipping along with such general measures designed to improve the herbage as can conveniently be applied. This combined method is applied to one section of the farm at a time and when one area has been freed of ticks, clearance of the next section is undertaken. In the area to be treated, all stock are removed and then a flock of sheep upon which the ticks collect is placed on the land. The sheep are dipped at weekly intervals for about six weeks during the March to May period of tick activity. Thereafter, the sheep are removed until September, which coincides with the middle of the second period of tick activity, when trapping of the ticks and weekly dippings are resumed. During the winter time, when the tick infestation has been much reduced and the remaining parasites are inactive, the land can be thrown open for general grazing, provided that all animals are dipped before being introduced into the area. The starvation and dipping processes are resumed during the following spring and, when a sufficient reduction of the tick population has been effected, the stock may, after a precautionary dipping or spraying, be reintroduced to the area and another section of land can then be dealt with in the same way. Care must, however, be taken to prevent animals from wandering between the cleared and the infested sections of the farm.

Summary

(*For tabular summary see opposite page*)

Errata.—Vet. Rec., **57**, No. 6, p. 61, col. 2, line 37—*for* "dressing" *read* "dosing"; No. 7, p. 77, col. 2, in third line of penultimate paragraph, *for* "ticked beef" *read* "licked beef."

Weekly Wisdom

For my part I would much sooner spend a month on a desert island with a veterinary surgeon than a prime minister.—Somerset Maugham.

CLINICAL COMMUNICATION

An Unusual Type of Ovarian Cyst*

F. A. CROWHURST, M.R.C.V.S.

Maidstone

The subject was a six-year-old pedigree Jersey cow.

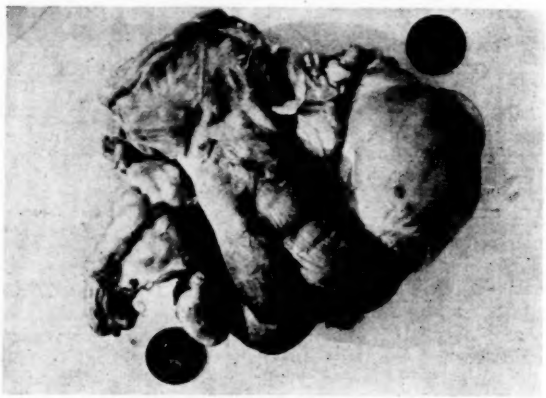
This cow's first calf was born alive, but the second and third pregnancies terminated in abortions which proved to be due to *Brucella* infection.

The cow was served twice at regular periods after the last abortion, and was then examined by me, revealing an endometritis. Both ovaries were found to be normal.

Treatment consisted in uterine irrigation with 50 c.c. stilboestrol in oil at bulling time and repeated in three weeks' time. Service by the bull was given three weeks after the last irrigation, but she returned a week later. She was again served and apparently held to service.

Examination about four months later to determine if she was really in calf (there had been slight signs of heat again) revealed a large spherical object the size of an orange in proximity to the left horn. The right ovary was found to be normal, but the left ovary could not be located, and it was presumed that the "lump" which fluctuated under pressure, had some connection with the ovary, though I thought it to be too large for a cyst. The uterus was in a quiescent state, and as the animal was not in calf, she was slaughtered.

Post-mortem examination revealed a very large cyst in the left ovary which was adherent to the left horn. On first seeing it I did not think it could be the ovary, but I found the Fallopian tube traversing the surface of the cyst which was evidence to show that the cyst was in fact the ovary. The right ovary was normal in appearance.



Discussion

Dr. Edwards asked Mr. Crowhurst if he attributed the cyst to the use of stilboestrol, the reply being that he (Mr. Crowhurst) thought there might possibly be some connection as the effects of stilboestrol were not properly understood.

Doubts were expressed by some members as to whether the cyst had any connection with the ovary at all, and the view put forward that it may have been a cyst of the uterine wall. Mr. Crowhurst then suggested forwarding the specimen to Mr. S. L. Hignett, of the Wellcome Research Station at Frant.

Mr. Hignett reports: "You were quite correct in assuming that the cyst was ovarian in origin. There is a fair amount of ovarian tissue left, although it would appear to be forming part of the cyst wall. The adherence of the cyst to the uterine wall would be due to constant pressure, together with inflammatory changes."

* *Post-mortem* specimen presented to the meeting of the South-Eastern Division, N.V.M.A., held at Tonbridge, November 16th, 1944.

* * * * *

Treatment of Ear Haematoma of the Dog and Cat

We are indebted to Messrs. Jen-Sal Laboratories for the following observations on the treatment of ear haematomas following our discussion on this subject in these columns in our issue of July 1st, 1944.

"In the past various corrective surgical procedures have been used in the treatment of conchal haematomas. These consisted of simple incision, removing an elliptical portion and packing mattress sutures through skin and cartilage to promote adhesion.

(*Continued on page* 92)

Table Summarising the Parasitic Diseases of Cattle

Disease	Ages of Animals Affected	Conditions of Husbandry with which Disease is Associated and Distribution of Disease	Observations which justify tentative Diagnosis	Confirmation of Diagnosis	Control Measures
Parasitic gastro-enteritis	In order of susceptibility: calves, yearlings, two- and three-year-olds, particularly calved heifers	Crowded grazing conditions. Sparse herbage as during drought. Continued grazing along with sheep	Poor thriving of a group of susceptible animals, particularly if associated with diarrhoea or anaemia	High egg count. High worm count on *post-mortem* examination	Treatment with phenothiazine, copper sulphate, copper and nicotine or tetrachlorethylene
Parasitic bronchitis	Calves and yearlings are the most susceptible	Crowded grazing conditions; particularly on permanent pastures. Sparse herbage. Low nutritional state	Husky cough in several members of an affected group of animals associated with a rapid falling away in condition	Finding of the larvae in the faeces. Presence of large numbers of worms (500 to 2,000 or more) on *post-mortem* examination	Remove from infected pastures. If necessary house and give supplementary rations. Treat with phenothiazine to eliminate gastro-intestinal worms and assist general resistance
Fascioliasis	Calves and yearlings	Autumnal grazing in wet pastures that provide a suitable habitat for *Limnaea truncatula*	Falling away in condition during the winter months, associated with anaemia	High egg count. Pathological changes seen in the liver on *post-mortem* examination	Treatment with carbon tetrachloride in young cattle on mountain pasture or on poor lowland pasture. Treatment with extract of *Filix mas* in other cases
Coccidiosis	Calves	Unhygienic conditions of housing	Acute diarrhoea with haematochezia affecting several members of a group	*Post-mortem* observations of lesions in large bowel associated with heavy coccidial infection	Thorough cleansing of calf pen at intervals of not more than 2 days
Babesiosis	Adult cattle	Grazing cattle on tick-infested land. The introduction of uninfected adult cattle to an endemic area	High temperature and inappetence in susceptible animals in an endemic area. Jaundice. Haemoglobinuria	Demonstration of the parasites in the red blood cells at the height of the fever	Treatment with 'Acapron' 'Pirevan,' 'Piroparve.' Tick eradication. Avoid introduction of susceptible adults
Pediculosis	Young cattle, particularly outliers in the winter, and dairy cows with winter coats	Low nutritional level, particularly in young stock	Pruritus. Rough scurfy condition of the coat	Finding of lice	Dressing with a solution of derris, or of nicotine sulphate
Ox warbles	All cattle exposed to attack by the fly, particularly young stock	Occurs under all ordinary conditions of cattle raising	'Gadding' of cattle in June, July or August. Appearance of 'Warbles' on the backs of cattle	Expression of the ox warble larva from the backs of the cattle	Dressing of backs of all cattle in a large area with a derris wash March to June
Scabies	All cattle	Occurs under all ordinary conditions of cattle raising. More severe during winter months	Marked pruritus. Falling-out of hair. Scabby condition of the skin	Demonstration of the acarus in skin scrapings	Dressing of all animals in the affected group with calcium sulphide
Ticks	All cattle	Hill pastures and rough heathland herbage	—	Finding of the ticks	Spraying the animals with arsenical dips or derris dips

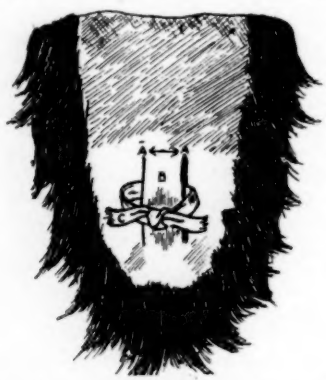
The following technique has been used in the practice of Dr. H. Wood Ayers, Oklahoma City, Okla., for several years. It eliminates puckering and drawing, thus preventing any post-operative permanent deformity.

Shave and disinfect the entire inner ear flap. Make two linear incisions—up and down—about half to three-eighths of an inch apart, incising the cavity freely. Curette the interior or scrape the inner walls of the haematoma with the belly blade of a bistoury.

When sure that all the tumour-like masses have been scraped away dress the cavity with phenyl-mercuric nitrate solution. This causes less drawing of the tissues than commonly used tincture of iodine.

Now insert one or two plies of suture tape through the two incisions. Tie around the middle section or strip of skin between the two incisions, using a double knot, as illustrated. The tape should be tied loose enough to prevent compression necrosis and permit moving it easily up and down the length of the incisions.

If the patient is not kept in the hospital instruct the owner to wash the area with soap and water daily. Change the tapes once or twice a week, or oftener, and continue with their use for two to four weeks, or until the cavity is sufficiently healed and closed."



The Ayers operation for conchal haematoma.
A-A—Two incisions.
B—Skin between incisions.
C—Suture tape as seton.

BEEF AND DAIRY BULLS

In December last the Minister of Agriculture announced that he was altering the licensing system for bulls to differentiate between beef and dairy bulls and, in the case of a dairy bull, to make the milk records of his ancestors, as well as his conformation, a prerequisite for a licence.

The licensing system will soon come into operation and bull licences will then be issued as follows :—

Beef Licence : for any bull that reaches the normal licensing standard, and is in the Pedigree or Grading-Up Register of a recognised Beef Breed Society, or has been bred from parents on the Register of a Beef Breed Society.

Dairy Licence : open to any bull that reaches the normal licensing standard ; and whose dam and sire's dam are officially milk recorded and have attained 600 gallons with the first calf, or 700 gallons with the second calf, or 800 gallons with later calves during a lactation period of not more than 365 days. Bulls of dual-purpose breeds will be eligible for a dairy bull licence if they fulfil the conditions.

General Licence : any bull of normal licensable standard that does not qualify for either the beef or dairy licence, will be eligible in this category.

* * * * *

A new antiseptic drug which appears successful in ridding infected wounds of "blue pus" is called phenoxetol and is related to ethylene glycol. Phenoxetol is less effective than penicillin and the sulphur drugs in staphylococcic and streptococcic infections, but more effective than they in combating *B. pyocyaneus*.—*Vet. med.*

* * * * *

Red blood cell concentrate mixed with jelly of tragacanth or hexylresorcinol forms a paste which speeds healing when applied directly to the wound in old, infected burns, ulcers and extensive granulating wounds—it seems to supply nutritional elements or proteins to tissues lacking them.—*Vet. med.*

ABSTRACTS

[Bovine Uterine Torsion. Welsh, W. E. (1944.) *J. Amer. vet. med. Ass.* **105**. 83-84.]

The author prefers to correct uterine torsion through the medium of a laparotomy incision, particularly if the rumen is distended with ingesta. The patient remaining standing, under epidural and infiltration anaesthesia a ten-inch incision is made in the right paralumbar fossa.. If the twist is to the left, towards the rumen, the hand is passed over the uterus between it and the rumen and a part of the foetus is located for the purposes of effecting counter rotation. If the torsion is to the right the hand is pressed between the uterus and the right abdominal wall. If no part of the foetus can be gripped then a fold of uterine wall has to suffice. The uterus is now rocked from side to side and then with a final effort is swung in the opposite direction to the twist. In the case of a large foetus and a full rumen considerable effort may be required. The peritoneal and muscle wounds are closed by catgut sutures and the skin by linen. Normal labour ensues but, if protracted, assistance is given.

C. F.

* * * * *

[Mushroom Poisoning in Cattle. Piercy, P. L., Hargis, G., and Brown, C. A. (1944.) *J. Amer. vet. med. Ass.* **105**. 206.]

A case of mushroom poisoning in one herd resulting in a small number of deaths, is recorded. Warm, moist climatic conditions had previously encouraged an enormous growth of white mushrooms (*Amanita verna*) and there being very little herbage available, the animals had taken to eating the fungi. It was observed that when plenty of normal food was available animals displayed a strong reluctance to eating the mushrooms, but the taste was acquired under conditions of shortage.

The most marked *symptom* observed was great unwillingness to defaecate normally, any attempt being clearly associated with considerable pain. The animal feared to raise its tail in the usual way, with the result that the faeces, normal in consistency, became matted in it and encrusted round the buttocks and ischia. There was a marked loss in weight but no anorexia, appetite and rumination remaining normal until just before death when convulsions intervened.

The *lesions* observed were very striking. Rectal examination was accompanied by great irritation. Numerous vesicles, papules, necrotic areas and ulcers were observed on the rectal mucous membrane. These lesions extended on to the anus and down over the vulva. In some instances prolapse occurred. On *post-mortem* examination marked inflammation was present throughout the digestive tract, the mucous membrane being easily rubbed off. The liver was congested and enlarged and showed petechiation and blood splashing both superficial and deep. The heart showed similar blood splashings, the kidneys were paler than normal and the bladder distended with urine.

Under natural conditions it was not possible to determine the toxic dose nor the incubative period, but experimentally a rabbit, forcibly fed with one small mushroom, became depressed and after a period of apparent normality died in convulsions two days after receiving the mushroom.

Post-mortem lesions resembled those found in cattle. The stomach wall was greatly thickened, ulcerated and inflamed, and there was inflammation the whole length of the alimentary tract. This was most severe, however, in the rectum. The liver was enlarged and the gall-bladder distended, the kidneys were slightly congested and the urinary bladder filled with a brick-red fluid. Ecchymoses were also observed on the heart and pleura. A calf which received 53, 80 and 82 grammes of mushroom on three consecutive days remained unaffected though the author points out that the dose was probably far less than that which would have been ingested under the prevailing conditions on the farm where the cattle were poisoned.

N. S. B.

* * * * *

[Sulphur Prophylaxis of Coccidiosis of Feeder Lambs. Christensen, J. F. (1944.) *Amer. J. vet. Res.* **5**. 341-345.]

The author has carried out a large scale experiment with 1,400 lambs on the prophylactic efficacy of ground crude sulphur against naturally acquired coccidiosis of feeder lambs to find out if this inexpensive and easily available chemical would tide the animals over the critical period for the development of clinical coccidiosis. Conclusions drawn from the experimental data are (*a*) that sulphur, given as 0·5 to 3·0 per cent. of the total ration, effectively prevented the development of clinical coccidiosis in 800 lambs, although it is admitted that the infections in the 600 untreated controls were mild; (*b*) that sulphur given in excess of 1·5 per cent. of the total ration had, as an objectionable feature, a laxative effect while the

Questions and Answers

"Questions and Answers" will be published on alternate weeks.
The submission of questions for inclusion in this column will be welcomed. They can relate to any aspect of veterinary work and where publication of the name of the enquirer is not desired, a pseudonym should be supplied, the name and address also being given.
Answers to readers' queries represent exclusively the personal opinions of the writers, and criticism of the replies will be appreciated.
All communications should be addressed to the Editor.

Specific and Non-specific Granular Vaginitis

Q.—*In view of the frequency with which cases of contagious granular vaginitis are being met with this year, is it important to differentiate the specific from the non-specific? Is there a simple means whereby the possibility that the disease is being caused by* Trichomonas foetus *can be excluded?*—*R. L.*

A.—It is first of all important to have a clear understanding as to what the questioner understands by contagious granular vaginitis. There are two schools of thought regarding this condition—some consider it a purely physiological condition of no clinical importance and having no influence on fertility; the others maintain that it is in fact a contagious disease and is a very definite factor in causing infertility.

Hignett and others report contagious granular vaginitis occurring in the north, particularly in heifers, associated with infertility.

The writer has never met this contagious granular vaginitis in the course of many years' experience, but does meet practically daily, particularly in Channel Islands herds, a condition which for a time was diagnosed as contagious granular vaginitis but which is now considered a purely physiological condition. The condition tends to disappear in the latter stages of pregnancy—seven months onwards—and to reappear six to eight weeks after parturition, quite spontaneously.

It does not cause infertility, and although it may be found in herds in which infertility is rife, it can be found just as frequently in herds with a first-class breeding history.

In trichomonas infection the vaginitis induced is usually acute and has direct relationship to service by an infected bull. The millet seed lesions which might be mistaken for those of granular vaginitis are described by some and repudiated by others who describe a much more acute condition associated with swelling and reddening of the mucous membrane, not limited to the area around the clitoris. This acute condition, when it occurs or is noticed, tends to disappear spontaneously within a short period—usually one week, and to be followed by the chronic condition associated with a so-called "raspy" condition of the vagina to the touch.

It is not constantly diagnosed in all cows with trichomoniasis and could not be accepted as a cardinal symptom of the disease.

Where trichomonas vaginitis is suspected the microscopic demonstration of the organisms in the discharge, which is always present in such cases, is a simple means of differentiation.

The question raises the very important point of the significance of "granular vaginitis" and contributions to the columns of the *Record* from veterinary surgeons with experience of this condition would be of interest.

Action of Stilboestrol Dipropionate

Q.—*What is the current view of the mode of action of stilboestrol dipropionate in bringing about ovulation in the bovine ovary? What is the action of this preparation in the male dog?*—"*Anoestrus.*"

A.—Fevold (see "Sex and Internal Secretions," ed. Allen, 1939), after reviewing a large series of physiological experiments dealing with the effect of oestrogens on the gonadotrophic activity of the anterior pituitary, concludes that oestrogens have a definite inhibiting action with regard to the follicle stimulating capacity of the anterior pituitary but that they appear to stimulate its luteinising capacity. Severinghaus (see also reference cited above), on the basis of cytological changes produced in the anterior pituitary in response to oestrogen administration comes to the same conclusion. This means that stilboestrol dipropionate can only induce ovulation in an ovary where there are already ripe or nearly ripe follicles. In a completely quiescent ovary, *i.e., during true anoestrum* stilboestrol administration will not induce ovulation. This conclusion is amply confirmed by the results obtained from the injection of stilboestrol into anoestrous heifers. The difficulty in such cases lies in accurately determining by clinical means the truly anoestrous state; heifers presumed to be in this state from a manual examination of the ovaries may in fact be in a phase in which there are a number of small follicles maturing. This latter type of case accounts for the success claimed for stilboestrol therapy in "anoestrous" heifers. Finally, it may be added in confirmation of the experimental evidence cited above that prolonged stilboestrol administration to cattle in the form of an implant results in complete quiescence of the ovaries within a relatively short time of the commencement of treatment (for details see *J. Endocrinology*. 4. No. 1, 1944).

There do not appear to be any published reports dealing specifically with the effect of stilboestrol on the male dog. Experimentally, it has been shown that prolonged stilboestrol administration to laboratory animals results in testicular degeneration, but resolution and normal sexual function follow withdrawal of the stilboestrol.

In the male human the administration of large doses of stilboestrol to the normal subject, or in cases of carcinoma of the prostate, may produce disappearance of libido, impotence and decreased sperm count. Stilboestrol has also been used with some success for the treatment of masturbation and other forms of abnormal sexual behaviour (see *Brit. med. J.* December 16th, 1944. p. 805). The daily administration of 1 to 5 mg. of stilboestrol by mouth apparently permits treated subjects to control intense sexual desire and to reduce considerably the frequency of masturbation. The treatment may have an adverse effect in causing tenderness and swelling of the breasts.

On analogy, it is suggested that stilboestrol may prove beneficial in male dogs exhibiting abnormal sexual behaviour and also in spontaneous prostatic hypertrophy in old dogs.

B. Haemolytic Streptococcus Infection of Dogs

Q.—(1) *We frequently see references to so-called* Beta haemolytic streptococcus *infection causing sterility, or death of the puppies at birth or soon afterwards. Some veterinary surgeons say there is no such disease, whilst others inject* Beta haemolytic streptococcus *vaccine for want of something better to do. If this disease does not exist, what is the cause of sterility, which is apparently contagious, and/or death of puppies at an early age in many kennels? Has there been a recent publication concerning this trouble?*—"*Puzzled.*"

(2) *Much is heard among dog fanciers regarding the* B. haemolytic streptococcus *infection of dogs, and the diseases caused by it, and last week there was a complaint in the canine press of the neglect of this condition by the veterinary profession. Could you, therefore, please let us know briefly the various manifestations of this infection, the treatment, and also the steps to be taken to certify a stud dog (or bitch) free from the* Beta haemolytic streptococcus *infection?*—*R. L.*

A.—(1) There is no good evidence that the *Beta haemolytic streptococcus* causes the syndrome associated with abortion, death of suckling puppies and sterility in the bitch. Beta haemolytic streptococci can be isolated from the vaginas of most healthy bitches, so that its presence in swabs taken does not necessarily signify that it was the cause of the trouble.

Clinically the condition is contagious, but many factors may contribute to this condition; heredity, nutrition, hormone dysfunction may all play a part. Among other bacteria that have been isolated at different times are *E. coli* and *E. coli communior*, and vaccines from these organisms have given satisfactory results in some cases.

(2) Infection with the *Beta haemolytic streptococcus* has been said by some people to be the cause of a very variable syndrome which is manifested by tonsillitis, pharyngitis, oedema of the throat, sterility, death of foetuses, abortion, death of puppies, skin irritation, etc.

Dogs have a fairly high resistance to infection with the *Beta haemolytic streptococcus* and it may be necessary for another predisposing infection such as distemper virus, a staphylococcal infection, or a mucoid discharge as in *B. bronchisepticus* infection of the respiratory system, or following abortion, to be present, before the *Beta haemolytic streptococcus* can become sufficiently virulent to invade healthy tissues.

Beta haemolytic streptococci produce as a rule an acute condition such as tonsillitis, or a fast-spreading lesion, as in cellulitis or septicaemia. It is unusual for it to produce a chronic condition by itself, but it may be present with other bacteria which are the root of the trouble and the *Beta haemolytic streptococcus* will only be dangerous when it can become invasive and produce an acute condition.

There is no good evidence that vaccine treatment has any influence on the course of infection with the *Beta haemolytic streptococcus*. As this organism is only dangerous in the acute condition, no time is available to work up an immunity with vaccines, if it were possible. The use of the sulphonamides should be the treatment of choice.

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weight gains of lambs receiving the larger percentages of the chemical did not compare favourably with those of the control animals. After feeding sulphur as 0·5 to 1·5 per cent. of the ration continuously over 72 days no visible ill effects were noted in the lambs, which showed a remarkably low death-rate from all causes and compared favourably with the untreated controls in the rate of fattening. Christensen considers from these preliminary observations that the feeding of sulphur in low percentages is a decidedly practical measure because of the availability and low cost of the chemical and calls attention to the desirability of further work to determine the value of the procedure against heavy experimental and natural infections. J. N. O.

[*Vet. Rec.*, **57**, p. 66, col. 1, third Abstract, *for* "spinoza" in both title and substance of abstract *read* "spinose."]

As Beta haemolytic streptococci are present in the majority of healthy bitches it would be a task of some magnitude to find one free from their presence.

Defects of War-time Suture Material

Q.—*I have had difficulty of late in suturing abdominal operation wounds. I find that the catgut made to-day is of inferior quality and either it is absorbed too soon or it just will not hold and soon slips, causing ruptures. I tried using a No. 6 silk but found I occasionally got deep suture abscesses later.—R. S. T.*

A.—The writer has experienced occasional difficulty in the use of catgut for suturing abdominal wounds in dogs since the war began. In these cases, however, the trouble has apparently been that the gut has acted as an irritant foreign body and has given rise to the usual buried suture sepsis. This has occurred with one or two batches of gut and is probably due to some slight defect in processing, for which the manufacturers have been unable to account. There is no satisfactory substitute for catgut in muscle suturing in the dog as silk so frequently causes buried suture sepsis; in the cat a fairly fine silk, Nos. 1 or 2, is often quite satisfactory although occasional deep suture trouble arises. Coates' No. 40 cotton has been used successfully in suturing the incision in the uterus in Caesarean section in dogs, but the writer is not aware of its use in suturing muscle layers.

The difficulty being encountered by the questioner is, in the writer's opinion, due not to the too-rapid absorption of the gut (healthy muscle tissue heals rapidly and serous membranes even more so and should have made a strong union well before the gut is likely to be absorbed) but to the fact that the knots in the gut are loosening and becoming untied. Measures which may prove helpful are:—

1. The placing of the cut strands of gut to be used amongst the hot, damp swabs, when the gut will soften and be easier to manipulate with precision.

2. The use of a finer gut, *e.g.*, No. 1 or 2, where No. 3 or 4 has previously been used and therefore the closer placing of the sutures to compensate the loss in strength of gut.

3. Modification in the method of knotting. The writer never uses the orthodox surgical knot in tying gut, but merely gives a single twist to the first part of the reef knot, following this by three, or even four, more single knots; such knots rarely come untied. This method, although causing much amusement to onlookers on occasion, has proved very satisfactory in the writer's experience. The ends should not be cut off too short.

If all else fails change the brand of catgut used, as different surgeons get good results with widely differing types of gut.

Tyre Replacements

Q.—*I am experiencing extreme difficulty in obtaining tyres for my motor car. How can I expedite their supply?*—"*Auto.*"

A.—Apply at a post office for form T.F.A.1, which is to be used for any privately licensed car of which the main supplementary petrol ration consists of E or PT coupons bearing the stamp of a Divisional Petroleum Office. Complete and sign the application and take care to quote the Divisional reference number. Post the form to the Petroleum Officer who issued your last coupons, but do not enclose the car registration book unless subsequently asked for it. You will then receive T.F.2 and instructions as to the next procedure. If tyres are allowed and are available you will have to surrender without payment an equivalent number of tyres removed from the car before replacements will be supplied for cash.

As the retailers can only obtain supplies *after* receiving T.F.2, it is advisable to apply before old tyres are completely worn out.

A NEW LIGHT ON VITAMINS

"A new conception of vitamins in relation to health and disease is likely to be propounded, if what I have read about the results of recent experiments is substantiated by subsequent work," writes "Onlooker" in the *Pharmaceutical Journal*, and continues: "Hitherto it has not been considered possible for human beings to synthesise any of the vitamins for themselves, with the exception, of course, of vitamin D, made by the action of the sun's rays on ergosterol in the skin. Now, it appears that evidence has been advanced to show that through the agency of certain bacteria in the intestine several of the components of the vitamin B complex can be synthesised from components present in the food. Such a finding may very well revolutionise current conceptions of vitamin therapy. Instead of supplying the synthetic or natural vitamins already formed, it may prove more satisfactory to supply the raw materials for the bacteria to perform the synthesis. Instead of judging the value of a food in terms of its vitamin content we may have to evaluate it in respect of its capability of maintaining vitamin synthesis."

Victoria Veterinary Benevolent Fund

MEETING OF COUNCIL

A meeting of Council of the Fund was held at 10, Red Lion Square, London, on Wednesday, January 10th, when the following were in attendance:—Lady Olver, Mrs. Glover, Mr. J. K. Bateman, Professor Buxton, Messrs. H. W. Dawes, G. P. Male, T. M. Mitchell, P. J. Simpson, A. Spicer, H. W. Steele-Bodger, Professor Wooldridge.

Apologies for absence were received from Mr. J. O. Powley, Mr. H. P. Standley, Mr. and Mrs. Wragg, Mr. J. Holroyd, Mr. W. McIntosh.

Mr. Arnold Spicer was elected to the Chair.

The minutes of the previous Council meeting, having been published, were taken as read and signed as correct.

Death of the President

The Secretary reported the sad loss the Fund had suffered by the death of the President, Lieut.-Col. J. W. Brittlebank. He read an extract from the Memorandum and Articles of Association which provide that Presidents of the Association are nominated by the Council and elected at the Annual General Meeting.

Professor Buxton moved that Mr. Arnold Spicer be nominated as President-elect of the Fund. It had always been felt that the occupant of the Presidential Chair should be someone who had devoted thought and time to the objects of the Fund, and he thought everybody would agree as to the interest shown and the time devoted by Mr. Spicer to the Fund for a very large number of years. He had always made the work of the Fund one of the major interests of his life and that alone fitted him for the post of President.

Mr. Male seconded the motion with pleasure. He felt that no one had taken a greater interest in the Fund than Mr. Spicer.

There were no other nominations, and the motion on being put to the meeting, was carried unanimously.

Mr. Spicer thanked the meeting for the honour conferred on him.

Mr. Male referred to the death of Colonel Brittlebank, and proposed that the condolences of the Council be conveyed to Mrs. Brittlebank and her family. Mr. Male continued: Colonel Brittlebank was our President for the past 18 years, and he always took a great personal interest in the work of the Fund. It was very dear to his heart and he was always ready to give his sympathy and his active support to the unfortunate members of the profession who needed help. He was a man we shall miss very sorely not only in this Council but in the R.C.V.S. Council. He was always a very wise counsellor and a very good friend.

The death of his son was a grievous loss to him but he bore that without complaint, and I am sure that everyone present will wish to join in an expression of deep sympathy with the widow and family.

Colonel Simpson first explained that although he volunteered to represent the Society at the funeral and caught an early train, to his great regret unfortunately the fog prevailing on that day rendered it impossible for him to complete the journey to Sawbridgeworth in time. Colonel Simpson proceeded: I would say that perhaps with the exception of Mr. Spicer there are none in the Fund who were more in touch with its work than Colonel Brittlebank; his knowledge of the applicants and their dependants was of great assistance, and his sense of justice was pronounced. He was always sympathetic and generous to those who deserved help, and the Fund can ill afford to lose his wise counsels. Our present acting President has had so intimate a knowledge of his ways that I am sure he will carry on on the same lines. I beg to second the motion that a vote of condolence be sent to the widow and family.

The motion was carried in silence, all the members standing.

Appointment of Treasurer.—Colonel Simpson proposed that Professor J. B. Buxton be appointed Treasurer to succeed Mr. Spicer. Mr. Dawes seconded, and the motion was unanimously carried.

Secretary's Report

The following report of the Secretary was received an approved:—

The last meeting of Council was held on July 4th, 1939. On the outbreak of war a circular was issued to the Council recommending that for the duration of the war the Executive Committee should be empowered to carry on the work of the Fund with the assistance of the Secretary, and this was approved.

Since that date five annual reports have been issued and five annual meetings held.

Constitution of the Council.—The following changes have occurred:—

(*a*) *President.*—The President of the Fund, Lieut.-Col. J. W. Brittlebank, died on December 18th, 1944. He had held office since 1927.

(*b*) *Vice-President.*—Mr. J. W. McIntosh replaces Capt. J. R. Rider (deceased) as a Vice-President.

(*c*) *Councillors Representing Subscribers.*—The following names have been removed for the reasons stated: Mr. A. Gooch (deceased), Mr. Wm. Wood (deceased), Lt.-Col. T. D. Young (deceased), Mr. W. Jackson Young (deceased), Professor J. J. O'Connor, Mrs. Nickinson and Mr. A. Mackenzie (not re-elected). In place of the above the following have been elected: Professor T. G. Browne, Mr. J. Holroyd, Mr. H. W. Steele-Bodger, Mr. J. O. Powley, Dr. W. R. Wooldridge, Mr. W. S. King and Mrs. Glover.

Grants Discontinued.—Nine grants were discontinued, owing to death and other causes.

New Grants.—Since the previous Council meeting the following new grants have been made:—

No. 225. October, 1939. Widow, eleven children, all under 21. £1 per week. Died August, 1943. Grant continued to eldest son.

No. 226. November, 1939. Widow. Grant while husband is in hospital, £2. N.V.B. and M.D. Fund now assisting.

No. 231. January, 1941. Widow, aged 41. Two sons under 17; 30s. per week until June (whilst receiving hospital treatment), then £1 per week.

No. 233. April, 1941. Member, aged 76. Infirm, failing eyesight; £1 per week till June, then £1 8s. 8d. per month.

No. 234. September, 1941. Member, aged 47. Unemployed. £1 per week.

No. 235. March, 1942. Widow, aged 85; net income £25 plus old age pension. £1 per week.

No. 236. March, 1942. Daughter of member, aged 61. Invalid. £1 per week. Died March, 1944.

No. 237. September, 1942. Widow, aged 56. Two sons in Forces. £1 per week.

No. 238. October, 1942. Member, aged 81. In hospital with broken leg. Income, £100 from rents. £1 per week.

No. 239. October, 1942. Widow, aged 60. No income. £1 per week; discontinued February, 1943.

No. 240. February, 1943. Widow, aged 56, daughter of deceased member. Ill health. £1 per week. Died 1943. Grant continued to sister, Miss K. E. Rugg.

No. 241. July, 1943. Widow, aged 50. Four children under 10. Eldest a medical student; 30s. per week.

No. 243. June, 1944. Widow, aged 37; three children at school. £1 per week.

No. 244. June, 1944. Widow, aged 68. Two sons, one prisoner of war, one a colliery manager. Permanent income, £185; temporary, £100. Grant, £1 per week.

No. 245. August, 1944. Widow, aged 60. No income. £1 per week.

No. 246. December, 1944. Widow, aged 63. One daughter. Casual earnings, £40 per annum. £1 per week.

The total number of persons aided in 1943 was 83, including 41 children or other dependants. The total amount spent on relief in 1943 was £1,554 10s. 8d. The figure for 1944 will be somewhat higher.

Life Members.—The following are entitled to election as Life Members: Miss M. J. Farman, H. C. Wilkins, A. W. Hart, J. P. A. Morris, D. C. Greene, Allen Baker, E. Morgan, D. S. Brown, Lt.-Col. J. B. Griffiths, W. Davies, J. F. D. Tutt, Major E. S. James, H. W. Good, A. Brownlee and L. P. Pugh.

Legacies.—The following legacies have been received during the past five years: Captain S. Villar, £200; W. Jackson Young, £100; J. B. Tutt, £50; J. J. Burchnall, £100; W. W. Smart, £100; Mrs. Hume, £100; M. E. Williams, £1,000; Mrs. W. Jackson Young, £500; J. F. Player, £500; and R. Dunwoody, £25.

Guy Sutton Memorial Fund.—Friends of the late Major Guy Sutton, a Life Member of the Fund, have contributed the sum of £1,260 10s. 0d. for the purpose of perpetuating his memory. The sum has been invested and the income is to be used for the general charitable purposes of the Fund.

Ladies' Guild.—The Ladies' Guild has been able to maintain an annual grant of £150 during the war years and in 1944 it was even able to increase the amount to £180. The Northern Ladies' Committee have also continued their help, making a grant each year in spite of difficulties caused by the war.

Investments.—During the five years' period the sum of £7,021 has been invested in Trustee Stocks.

Subscriptions.—During the war period, as was perhaps to be expected, the number of subscribing members of the Fund has decreased considerably, as the following figures show:—

	Amount received in Subscriptions
1939	£580 3 9*
1940	760 2 3†
1941	543 3 0‡
1942	337 4 0
1943	290 13 8

The diminution of income from subscription has been offset to some extent by the increase in the amount of interest from investments.

The N.V.M.A. also contributed in 1940 the sum of £1,000 to form a National Veterinary War Relief Fund, to assist members of the profession whose practices have been adversely affected as a consequence of the war. Only one appeal for such help has been received, and a grant of £100 was made.

Income From Investments.—The income from investments has been increased since 1939 by the sum of £341, as shown below:—

	1939	1943
General Fund	£665 13 4	£1,013 12 4
Clement Stephenson Fund	481 18 4	474 18 4
	£1,147 11 8	£1,488 10 8

* This included the large amount of £153 from the Irish V.M.A. and two special gifts amounting to £46.

† This included £138 3s. 9d. from the N.V.M.A. in response to a special appeal by the President, Mr. H. W. Steele-Bodger.

‡ This included £256 7s. from the N.V.M.A. special appeal.

It was resolved:—

Case No. 231. That enquiries be instituted as to the present financial position of this recipient.

Case No. 233. That Mr. Wragg be asked to visit this recipient and to report.

Case No. 234. That enquiries be made as to the needs of this member.

Case No. 246. That a grant of £1 per week be made.

In the remainder of the cases, the action of the Executive Committee was approved, and the Committee was authorised to increase or decrease at their discretion the amount of the grants made.

Life Members.—On the motion of Mr. MALE, seconded by Colonel SIMPSON, the members named in the Secretary's report were duly elected Life Members of the Fund.

Ladies' Guild.—On the motion of Colonel SIMPSON it was resolved that the most cordial thanks of the Council be conveyed to the Ladies' Guild and the Ladies' Committee of the North of England for their continuous generous help to the Fund.

Investments.—It was resolved that of the £900 in the National Veterinary War Relief Fund £500 be placed on deposit in the Post Office Savings Bank.

QUESTIONS IN PARLIAMENT

University Grants (Government Proposals)

The following Questions stood upon the Order Paper of the House of Commons on Tuesday of last week:—

"Mr. SALT,—To ask Mr. Chancellor of the Exchequer whether he is now in a position to make a statement on the provision to be made to meet the post-war requirements of the universities."

"Sir ERNEST GRAHAM-LITTLE,—To ask Mr. Chancellor of the Exchequer whether he is now in a position to make a statement on the provision to be made to meet the post-war requirements of the universities."

At the end of Questions—

Sir J. ANDERSON: I will, with permission, make a statement in answer to Questions 56 and 65 with regard to the provision to be made for meeting the post-war requirements of the universities.

I have carefully considered a report made to me by the University Grants Committee on the probable financial needs of the universities in Great Britain during the first decade after the war, and I have also had the advantage of hearing the views of a deputation of representatives of the universities and university colleges. It is clear that if the universites are to play the part which they should in the reconstruction of our national life after the war, they will have to incur expenditure on a very much higher scale than before the war. It is also clear that if the future financial needs of the universities are to be met, a large share of this new expenditure will have to be met by the Exchequer.

As regards recurrent expenditure, it is not easy to forecast with any accuracy what will be the actual expenditure of the universities during the transitional period between war and peace. Both the University Grants Committee and the universities themselves have emphasised the importance of not sacrificing quality to quantity, and it follows that in the immediate future the supply of adequately qualified staff will be a limiting factor on development. The increased expenditure to be incurred by the universities will not therefore be spread equally over the ten years period of the Committee's review. It will be heavier during the later than the earlier years of the decade, and the Government recognise that the grant to universities during those later years will need to be further and substantially increased above the level now proposed for the next two years. The University Grants Committee have recommended that the present annual vote for the universities of £2,149,000 should be increased, for each of the next two financial years, by the addition of £2,000,000 for general university purposes, £1,000,000 for developments in the medical schools arising out of the recommendations of the Inter-Departmental Committee on Medical Schools and £500,000 for grants for teaching hospitals as recommended by that Committee. The Government have decided to accept the recommendations of the University Grants Committee for the two years in question. The question of the grant for future years will need to be reviewed at the end of the two years.

As regards expenditure for capital purposes, the needs of the universities have in the past been met for the most part by private benefactions. I am advised by the University Grants Committee and the universities that this source of support cannot be expected to meet the needs of the universities for capital developments in the years following the war, and that if the building programmes of the universities are to be carried out, a large share of the cost will have to be met from the Exchequer. The University Grants Committee have estimated that the universities will need to expend about £18,750,000 calculated at pre-war prices on capital developments during the decade and the Inter-Departmental Committee on Medical Schools estimate that an additional sum of £10,000,000 (also at pre-war prices) will be required for developments in the medical schools. The Government accept these estimates as indications of the probable scale of necessary capital developments, and they recognise that a very substantial proportion of the money will have to be provided from the Exchequer.

In view of the restrictions on building which are likely to operate during the years immediately following the war, it seems unlikely that the universities will have opportunities for any considerable capital expenditure during the next year or two. In the circumstances it seems to me that it will be sufficient to include in the Estimates for the coming year a token sum of £250,000 for distribution by the University Grants Committee, without prejudice to what may be necessary in later years.

Accordingly, I am including in the 1945 Estimates £5,900,000 as a grant in aid of universities, colleges, medical schools, and teaching hospitals (Great Britain). It should not be assumed, however, that this amount will need to be distributed in grant

within the financial year. This matter will be within the discretion of the University Grants Committee who will review the position from time to time in the light of developments and may elect to retain part of the provision in the deposit account into which the grant in aid will, as usual, be paid. Any amount so retained will not in any case be liable to surrender to the Exchequer at the end of the year, but will remain available for distribution in the future.

Mr. Kenneth Lindsay: Will my right hon. Friend bear in mind that, in spite of the vital importance of the freedom of the universities, some pressure may be necessary as there is likely to be a greatly increased demand for university training immediately after the war; and that the promises made by the Minister of Labour to ex-Service men cannot be implemented unless concrete plans are quickly prepared, even for improvised accommodation, as Leeds and Manchester have already done. Could my right hon. Friend ensure that if the £250,000 is not sufficient a further sum will be available?

Sir J. Anderson: I know, having been in personal touch with the vice-chancellors, that the universities are giving serious consideration to the demands likely to be made upon them. In the event of the £250,000 to which I have referred, and which is really not much more than a token sum, proving insufficient, the possibility of its being increased within the financial year will certainly not be ruled out.

Mr. Salt: Is my right hon. Friend satisfied that the increased grant will enable British universities to provide the greatly increased number of science and technology graduates, who are essential to ensure the efficiency and prosperity of the country in the post-war world? Is he satisfied that his answer will give great satisfaction to the members of the Parliamentary Scientific Committee?

Sir J. Anderson: The development of scientific teaching has been very much in the minds of the University Grants Committee in making their recommendations.

Sir Joseph Lamb: Do the medical schools to which my right hon. Friend referred include veterinary colleges?

Sir J. Anderson: I would like notice of that question.

Mr. John Dugdale: If the universities have to purchase any land for their extensions will they be able to acquire it at 1939 prices, or will they have to pay much inflated prices?

Sir J. Anderson: That question does not arise out of my statement.

Mr. Quintin Hogg: Is the grant of £2 000,000 for general university purposes considered to include any allowance for the subsistence or tutorial fees of students who may have had their university courses broken by the war, or will there be a separate grant for that purpose?

Sir J. Anderson: This is a grant towards expenses falling on the universities. It has nothing at all to do with any assistance that may be provided to students.

Mr. Edmund Harvey: While thanking the right hon. Gentleman for his reply, which will give great satisfaction in the universities, may I ask whether his Estimates for the forthcoming year will permit of increased scales of salaries to the existing staffs, many of whom are seriously underpaid?

Sir J. Anderson: That question also, to my knowledge, has been taken into account.

Dr. Edith Summerskill: What period of grace does the right hon. Gentleman propose to give those medical schools which now admit only men, to allow them to make arrangements for the admission of women before he withholds grants in those cases where they refuse to do that?

Sir J. Anderson: I am glad to say that that particular question has not so far come within my jurisdiction.

Mr. Malcolm MacMillan: In the distribution of the money, will the right hon. Gentleman bear in mind the much higher proportion of university students in relation to population in Scotland?

Sir J. Anderson: I am always alive to the interests of Scotland.

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Bee Diseases

Mr. E. P. Smith asked the Minister of Agriculture whether any Regulations have been made by his Department for dealing with bee colonies infested with foul brood and Isle of Wight disease; and what methods obtain of enforcing such Regulations.

The Minister of Agriculture (Mr. R. S. Hudson): The Foul Brood Disease of Bees Order, 1942, empowers county war agricultural executive committees in England and Wales to take action to deal with colonies of bees infested with foul brood disease. No Regulations have been made in the case of Isle of Wight Disease.

Mr. Smith: Will my right hon. Friend consider establishing a National Register and making these diseases compulsorily notifiable, as well as providing compensation where colonies have had to be destroyed?

NOTES AND NEWS

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Feb. 24th.—Whole-day Conference of Nutrition Society, London School of Hygiene and Tropical Medicine, 11 a.m. Afternoon session, commencing at 2.15, will include papers on "Value of Wheat Offals for Milk Production," by Professor H. D. Kay, and on "Value of Wheat Offals for Pigs and Poultry," by Mr. E. T. Halnan.
Mar. 1st.—Meeting of the Society of Veterinary Practitioners at Chester (Queen's Hotel), 2.30 p.m.
Mar. 1st.—Meeting of the Central Veterinary Society at the Conway Hall, W.C.1, 2 p.m.
Mar. 3rd.—Meeting of the Nutrition Society (Scottish Group) Royal (Dick) Veterinary College, Edinburgh, 10.30 a.m. (Subject: "Problems of Stock Feeding.")
Mar. 8th.—Annual General Meeting of the South-Eastern Division, N.V.M.A., at Maidstone (Royal Star Hotel), 2.30 p.m.
Mar. 9th.—Meeting of the Dumfries and Galloway Division, N.V.M.A., at Carlisle (Crown and Mitre Hotel), 2 p.m.
Mar. 14th.—Annual General Meeting of the Western Counties Division, N.V.M.A., at Exeter (Guildhall), 2 p.m.
Mar. 17th.—Meeting of the Society of Women Veterinary Surgeons, 69, Great Peter Street, Westminster, S.W.1, 2.15 p.m.
April 1st.—R.C.V.S. Annual Fees due.
April 11th.—R.C.V.S. Committee Meetings.
April 12th.—R.C.V.S. Committee and Council Meetings.
May 8th.—R.C.V.S. Council Elections—last day for nominations.
May 22nd.—R.C.V.S. Council Election—Voting Papers issued.
May 29th.—R.C.V.S. Council Election—Voting Papers to be returned.
June 5th.—R.C.V.S. Annual General Meeting.
June 6th.—R.C.V.S. Committee and Council Meetings.

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R.C.V.S. Council Election, June, 1945

Since our last issue, the nominations for election to Council, R.C.V.S., have been received of Major R. C. G. Hancock (Beaconsfield), Captain J. Campbell Hill (Llanelly) and Dr. A. W. Stableforth (Weybridge).

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Roll of Honour

Flight-Lieutenant Geoffrey Lloyd

The deepest sympathy of the profession will be extended to Colonel Glyn Lloyd, D.S.O., of the Royal Army Veterinary Corps, and Mrs. Lloyd in the death in a flying accident this month, of their elder son, Flight-Lieutenant Geoffrey Yale Lloyd. Geoffrey Lloyd had shown the greatest gallantry in his four years' experience of operational flying over North Africa, Sicily, Italy, Germany and Holland. His father, a Fellow of the Royal College, is also a Barrister-at-Law, and Geoffrey was hoping to study for call to the Bar: already he had entered Gray's Inn.

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R.C.V.S. OBITUARY

The Late Mr. A. B. Forsyth, M.R.C.V.S.

An Appreciation

By the death of Alexander Bayne Forsyth, announced in your issue of February 3rd, the veterinary profession in the Midlands has lost one of its best known and widely respected members. Born in 1864, the son of a Scottish farmer, A. B. Forsyth was educated at Melrose and the new Veterinary College, Edinburgh, from which he graduated at the early age of 18 in 1883. After holding positions as assistant at Tamworth and Walsall, in 1885 he took over the practice of Mr. Markham and established himself at Cannock, where a large and widely spread practice was rapidly extended. A large proportion of the practice was associated with the collieries on Cannock Chase and Forsyth soon became well known in this respect. His knowledge of pit ponies and work underground was unsurpassed, and he played a considerable part in drafting the official conditions laid down for ponies working underground in the Coal Mines Act of 1911. He was for many years consulting Veterinary Surgeon for the Office of Mines and on behalf of that body he conducted a survey of pit horse conditions in the southern half of England as late as 1931. A pioneer in many respects, he was using the mallein test extensively in 1901 and was testing all ponies in his charge long before testing became

compulsory in 1911. A first-class judge of a horse, poultry and pigeons, these constituted his hobbies for many years, and he was a great admirer of the Hackney when that horse was at the height of its popularity.

Always interested in the progress of his profession, he was an active member of the Midland Counties Veterinary Medical Association and held the presidential chair in 1923. Latterly, in view of this long association, he was elected an Honorary Associate of the Midland V.M.A.—an honour which he deeply appreciated. Mr. Forsyth was a frequent attender with his wife at the Annual Congress of the N.V.M.A.

In his married life he was singularly happy and fortunate—marrying a Staffordshire lady in 1900, his family life was one of the happiest. Some years ago he retired from active practice, being succeeded by his eldest son and partner, Mr. A. A. Forsyth, who is an Examiner in Surgery to the R.C.V.S.

Always taking a keen interest to the last in the affairs of his profession, he was a great reader and kept abreast of modern changes and development, whilst retaining a critical mind and sometimes a pungent caustic comment when necessary.

In accordance with his expressed wishes, his ashes, after cremation, were scattered upon Cannock Chase, of which he said " he was part and parcel."

The deepest sympathy of his many friends will be extended to Mrs. Forsyth and the members of his family.

The writer had the privilege of his friendship for nearly 30 years and of him it can truly be said " This was a man."

H. W. D.

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PERSONAL

Appointments.—The Colonial Office announces the appointment in the Colonial Veterinary Service of Mr. R. W. Crowther, M.R.C.V.S., and Mr. D. A. W. Walker, M.R.C.V.S., as Veterinary Officers, Nigeria.

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Births.—Bolton.—On January 28th, 1945, at Glandore Private Nursing Home, Belfast, to Isa (*née* Warnock), wife of S. R. Bolton, M.R.C.V.S., Cookstown—a daughter.

Trump.—On February 11th, 1945, at Cruxwell House, Bromyard, to Iris, wife of Hrolf L. Trump, M.R.C.V.S., a daughter, Catherine Margaret.

Webber.—On February 15th, 1945, to Beryl (*née* Comerford), wife of R. P. Webber, M.R.C.V.S., Royston, Herts.—a son.

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Death.—Allen.—On February 12th, 1945, at Birmingham, Nellie, wife of C. G. Allen, M.R.C.V.S.

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ANIMAL HEALTH FILMS

The I.C.I. Company and their collaborators in the film industry and the veterinary profession are to congratulated on their efforts in producing films on animal diseases to assist in the further education of the livestock owners. This is quite a new venture and with the limitations inherent in the use of the film tremendous difficulties must have arisen in employing this still relatively new medium to present a clear picture of the incidence, economic importance and methods of control of disease.

A series of six films is planned, of which three, on mastitis, bovine contagious abortion and tuberculosis, are completed and released.

The general arrangement is good. The films contain a great deal of well-balanced information, but are not crammed with a lot of facts which would make them indigestible to the audience. Each gives a clear picture of the importance of the disease and how it may be attacked.

The veterinary surgeon might not be very happy about the classification of mastitis as shown, nor perhaps the repeated use of words such as " vet." and " bag," and would deprecate the approach to and handling of the retained placenta without coat or rubber boots. There are certain errors of veterinary technique in all three films, but it must be borne in mind that these films are intended for stock owners and not for veterinary surgeons.

The reference in the film to the use of two types of vaccine against bovine contagious abortion is now obsolete, and one wonders if the advice concerning the liming and ploughing of infected pastures as given may not be misleading. The photo-micrographs of tubercle bacilli are not good.

The producers must have learnt a great deal by their experience with these films and if greater care is taken to overcome any apparent incompatibility between the veterinary and motion picture techniques, we shall look forward with pleasure to the remainder of the series.

Central Film Library

The above films are included in the collection of the Central Film Library, Imperial Institute, London, S.W.7, to whom applications should be made for loan. Intending borrowers must give details of the meetings at which the films are to be shown and specify as to whether they have the correct apparatus for projection and an experienced projectionist. For instance, the films at present are 16 millimetre sound films and cannot be shown on a 16 millimetre silent projector: the making of silent versions of the films is under consideration. The references to the films, in the collection, are Mastitis U.K. 572, Contagious Abortion U.K. 573 and Tuberculosis U.K. 574. The time required for their showing is respectively 13, 10 and 9 minutes. An introductory film, which will be U.K. 571 and entitled " Hygiene on the Farm " is likely to be ready within three months.

The above four films form part of a series on the health of dairy cattle; the other two which are to be produced are on breeding and sterility.

Other conditions governing the loan of the films—concerning their return, damage, etc.—are best obtained from the Central Film Library at the time of borrowing.

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ADDRESSES OF DISEASE-INFECTED PREMISES

Foot-and-Mouth Disease: Bowsland Farm, Patchway Common, Almondsbury, Bristol, Glos. (Feb. 13th); 81, Gloucester Road, Bristol, 7, Glos. (Feb. 14th); 41, Green Lane, Wickersley, Rotherham, Yorks., W.R.; Whitefield Farm, Blackfield, Southampton (Feb. 16th); Ivy Farm, Dalton Brook, Rotherham, Yorks. (Feb. 17th).

Swine Fever: The Limes, North Road, Eaton Socon, Bedford; Furze Park, St. Merryn, Padstow, Cornwall; Barraer Farm, Penninghame, Newton Stewart, Wigtown (Feb. 13th); The Piggeries, Grillo, Pentre, Queensferry, Chester; Shepherd's Farm, Newlyn East, Newquay, Cornwall; Horton Estate Farm, Epsom, Surrey; High Westing Farm, Bingham, Notts.; Faunt Bridge, Old Leake, Boston, Lincs.; Nanfans Farm, Prestwood, Gt. Missenden, Bucks. (Feb. 14th); The Square, Wansford, Driffield, Yorks.; Calenick Farm, Kea, Truro, Cornwall; 5, Dolphin Street Gardens, Sheffield (Piggery at Forest Side, Mansfield Road, Sutton-in-Ashfield, Notts.); Front Street, Middleton, Driffield, Yorks. (Feb. 15th); Carters House, Long Handborough, Oxford (Feb. 16th).

Sheep Scab: Townend Farm, Laycock, Keighley, Yorks. (Feb. 12th); Tynyffyononau Farm, Llangynog, Oswestry (Feb. 13th); Tynyfron Farm, Melinywig, Corwen, Merioneth (Feb. 15th).

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Foot-and-Mouth Disease in Sweden

A Reuter message from Stockholm says that a case of foot-and-mouth disease has been reported from the island of Ven, situated between the southern Swedish province of Scania and Denmark. This is the first case in Sweden since April, 1942. Owing to the isolated situation of the island, it is hoped that the disease will not spread.

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RED CROSS AGRICULTURE FUND

That there has been no slackening of effort by the rural community on behalf of the Red Cross Agriculture Fund is evidenced by the announcement that the £7,000,000 mark has been passed. Moreover, so great has been the enthusiasm that it has taken only 12 months to raise £3,000,000. Of the grand total, contributions from England and Wales amount to £6,263,735; Scotland, £615,272; and Northern Ireland, £124,622. In January, for the sixth successive month, the sum contributed in England and Wales exceeded £200,000.

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" Veterinary Record " Index, 1944.—It is regretted that difficulties attendant upon the printing of the index to Volume 56 (1944) have delayed issue. It is hoped to circulate the index with one of our March issues.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

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MASTITIS CONTROL

Sir,—It would give me great pleasure to express through your columns my appreciation to Mr. R. W. Roach for his extremely practical and knowledgeable essay " Mastitis and the Practitioner " published recently.

I agree with Mr. Roach that the control of *Strept. agalactiae* mastitis can and does work very efficiently, but two things are essential for success: (*a*) the adoption of the Van Rensberg technique of milk testing by laboratories generally and (*b*) a farmer and staff who will co-operate in a whole-hearted and painstaking manner with the practitioner.

I would go perhaps further than Mr. Roach and say that it is more satisfactory and satisfying for the practitioner to carry out his own routine sampling and testing—using the Van Rensberg method—but there is a very strict limit to the amount of this work a busy practitioner can undertake if the testing is to be carried out quarterly.

Much more important than this, however, is the fact that the practitioner is so often discouraged when, having carried out all the preliminary work, he finds that the farmer and his staff will not or cannot maintain the high degree of attention to detail so imperative to success.

I personally have no doubt that I have disclosed the reasons why Mr. Roach gets more requests for control from farmers than from practitioners. Either the practitioners have suffered in the past from the extremely unreliable results given by laboratory testing and are not cognisant of the high degree of efficiency of this comparatively simple and new technique or they know that the necessary co-operation on the part of the farmer will not be forthcoming.

"Summer mastitis" is defined by Mr. Roach as mastitis in dry cows when flies are prevalent. I disagree most emphatically with him when he states that "this has probably given rise to the entirely erroneous idea that staphylococci can cause summer mastitis." In the district in which I work I have had, and every year do have, a number of cases of "summer mastitis" caused by pure staphylococcal infection. I have had this confirmed many times by laboratory diagnosis to check my own microscopic findings. I might add that there seems no doubt that mastitis varies greatly in different districts.

Yours faithfully,

Stirling House, J. P. Pickering.
Hexham, Northumberland.
February 10th, 1945.

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NECROSIS OF THE MUCOUS MEMBRANE OF THE BLADDER

Sir,—The clinical article in this week's *Record* from Mr. F. Chambers prompts me to record a similar case.

Three years ago I revisited a cow from which I had removed the foetal membranes some weeks earlier. The owner complained that the animal was having difficulty in passing urine.

Rectal examination revealed a fairly distended bladder. Vaginal examination presented a normal appearance except for a small piece of material protruding from the meatus. I was able to seize this and gradually and easily draw out a tough piece of tissue about 5 in. by 4 in., exactly like a child's mitten in shape.

Unlike the cases recorded by Mr. Chambers, this black and necrotic-looking structure had little odour and no calculi were observed.

A section through this tissue revealed no lumen—suggesting that if it were the lining of the bladder, the surfaces had become adherent and that it had been free from the bladder for some time. The animal made a rapid and uneventful recovery.

Yours faithfully,

12, Severn Street, Welshpool. R. J. A. Swift.
February 14th, 1945.

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THE COMPOSITION OF COUNCIL, N.V.M.A.

Sir,—Attention has recently been drawn to the fact that our council is considered by some to be too big, unwieldy and badly balanced. The report of the committee formed under the chairmanship of Major Lishman to consider the Articles of Association of the "National" evidently held this view and made several recommendations for improvement. As has been shown in discussion, there are a number of issues involved in the proposed change, and it is essential to give the most careful thought to the matter before venturing upon any decision.

Our council, like many British institutions, appears to have been gradually evolved, rather than developed, as a result of careful planning, and again following precedent, appears to work quite well in practice, in spite of being all wrong in theory. The main contentions of the committee appear to fall under the following headings:—

(*a*) A considerable reduction in the size of council.
(*b*) A change in the manner of election.
(*c*) Discontinuance of the present custom of granting past Presidents life membership.
(*d*) Inclusion in the Articles of Association of certain Articles referring to the powers of the Editorial Committee.

It will be easier to crystallise thoughts into a constructive policy if one considers these headings separately.

(*a*) Whilst it is true that some 120 members appears at first to be excessive, yet a large council has certain distinct advantages. Looking around any of our council meetings, one is immediately struck by the representative character of its members. One sees those engaged in every branch of professional life from every part of the country, and the balance between the "elder statesmen" and the progressive younger generation is nicely preserved. Furthermore, the size of the Association is considerable and the scope of its endeavour perpetually increasing. Beyond a small clerical staff, the huge volume of the work of the Association is carried out by a series of committees, the majority of whose members should be councillors. The larger the council, the greater is the field of selection for both work and responsibility, and the greater the help in carrying out the work. In 1943, there were 125 different members serving on the committees of council, many on more than one—could the same volume of work be carried out by a council of approximately 55 members?

A further point to be borne in mind is that attendance at meetings cannot be expected to reach the 100 per cent., and owing to war-time conditions probably rarely exceeds 50 per cent., and in the event of council being seriously reduced in size, one can visualise decisions of the greatest importance being taken by a very few members. The annual general meeting has already had occasion to express opinions upon this procedure!

(*b*) Few can be entirely satisfied with our present system of election. The sectional divisions appear to have far too high a percentage of members, and we are also faced with the somewhat unfair system of plurality of voting where members, or even non-members, joint several divisions. The suggestions put forward by the committee for overcoming these drawbacks are that divisions, territorial or sectional, will be represented by one member each, regardless of numbers in the division, and the remainder of council made up of a pool of members elected by a "universal franchise."

These suggestions are unlikely to be generally acceptable, and appear to constitute a rather unsatisfactory compromise between a "disproportionate proportionate representation" and an election by popular vote, which will frequently mean of candidates who are not known to the electors. An election of this type is of doubtful value and practicability, except inasmuch as it does, in part, overcome the difficulty of the members who are not members of any division and are at the moment disfranchised. They would then be "semi-franchised." It would appear very much simpler to point out to them the desirability of joining their local division.

It has been suggested that the sectional divisions would be deprived of representation on the council of the "National."

There is something to be said in favour of this suggestion, as the members can also vote in their geographical division. However, special consideration must be given to the Association of Veterinary Inspectors and the Society of Women Veterinary Surgeons for obvious reasons. It is probable, however, that representation of the sectional interests should be materially reduced. Perhaps a better suggestion is that membership should be limited to one sectional and one regional division. This might be one way of overcoming the present unsatisfactory state of plurality of voting. Some people have even suggested that the whole structure of the relationship between the divisions and the parent body should be reorganised: that by joining one of the divisions one becomes automatically a member of the "National," and that one fee should be payable to the division, which will in turn pay an affiliation fee to the parent body. This suggestion would solve both the vexed question of members having several votes, and also that of the disfranchisement of non-members of divisions, and still further that oft-debated question, as to whether one may be admitted to membership of a division if one is not already a "National" member. This system appears on the surface to be simple and satisfactory, but, on the other hand, the divisions would lose a good deal of revenue and numerical membership. Furthermore, it must be borne in mind that the divisions are autonomous institutions and the "National" cannot dictate policy to them. Possibly some solution could be found in limiting voting powers in matters pertaining to the "National," to one division.

(*c*) The loss of experienced councillors in the persons of past presidents is one which we could ill afford. Their number will necessarily always be limited, and one can see very little advantage in the suggested change. The committee has pointed out that their services may be retained, because they will be eligible to stand for election in the proposed general pool. This could only have the effect of preventing younger men from gaining seats on council.

(*d*) The additional Article limiting the powers of the Editorial Committee is receiving the attention of council, following the resolution proposed at the last annual general meeting, and is not relevant to these notes.

It is to be hoped that this important matter will be granted the fullest possible discussion in the divisions and later in council. But let us beware of criticising our present system too adversely. It has a great deal to commend it and it is vital to retain all the good in the present method within the framework of any new constitution. We must confine ourselves to removing present abuses while retaining the advantages of large size, wide representation, and opportunity for younger men to gain experience with the work of the Association.

Yours faithfully,

49, Cambridge Street, L. Guy Anderson.
Aylesbury, Bucks.